What is claimed is:

1. A method for efficiently characterizing an N-port device under test (DUT) using a vector network analyzer (VNA), wherein N is 2 or greater, the method including:

(a) dividing the N-port DUT into multiple sub-devices that each include less than N ports;

(b) performing at least an M-port VNA calibration, where M is equal to a number of ports on the one of the multiple sub-devices having the greatest number of ports; and

(c) using the VNA to determine S-parameters for each sub-device.

2. The method of claim 1, wherein step (a) includes dividing the N-port DUT into multiple sub-devices based on transmission path levels between the N-ports.

3. The method of claim 2, wherein step (a) includes:

(a.1) determining a transmission path level between each pair of the N ports; and

(a.2) grouping ports together as being part of a same sub-device or a different sub-device based on relative transmission levels between the pairs of ports.

4. The method of claim 3, wherein step (a.2) includes for each port:

comparing a highest transmission path level associated with the port to each other possible transmission path level associated with the port;

grouping those of the other ports corresponding to a transmission level path within a threshold range of the highest transmission path, as being part of a same sub-device; and

grouping those of the other ports corresponding to a transmission level path not with the threshold range of the highest transmission path, as being part of a separate sub-device.

5. The method of claim 4, wherein the threshold range is a predetermined number of dB.

6. The method of claim 1, wherein step (b) includes performing an M port calibration.

7. The method of claim 6, wherein more than one of the sub-devices can include M ports.

8. The method of claim 1, wherein step (b) includes performing an N port calibration.

9. The method of claim 1, wherein step (c) includes for each sub-device:

(c.1) measuring S-parameters for the sub-device; and

(c.2) removing calibration errors from the measured S-parameters, the calibration errors determined by the VNA during step (b).

10. The method of claim 9, wherein:

step (b) includes determining a set of error coefficients representative of calibration errors; and

step (c.2) includes using only a sub-set of the set of error coefficients determined in step (b) when removing calibration errors, the sub-set corresponding to the measured S-parameters.

11. The method of claim 8, wherein step (a) can be performed by a user with or without the assistance of the VNA, or by the VNA with or without the assistance of a user.

12. A method to be performed with a vector network analyzer (VNA), the method for efficiently characterizing an N-port device under test (DUT), wherein N is 2 or greater, and wherein the N-port DUT is capable of being treated as multiple sub-devices that each include less than N ports, the method including:

(a) performing at least an M-port VNA calibration, where M is equal to a number of ports on the one of the multiple sub-devices having the greatest number of ports;

(b) presenting at least one menu that allows selection of which S-parameters are of interest for each sub-device;

(c) accepting inputs that specify which S-parameters are of interest for each sub-device; and

(d) determining the S-parameters of interest for each sub-device as identified at step (c), without determining the S-parameters that are not of interest.

13. The method of claim 12, wherein step (c) includes accepting the inputs from a user or a test controller.

14. The method of claim 13, wherein step (b) comprises presenting a menu that includes links to the following sub-menus:

a sub-menu that allows selection of which ports of the VNA should be used to perform full S-parameter measurements;

a sub-menu that allows selection of which ports of the VNA should be used to perform reflection only S-parameter measurements; and

a sub-menu that allows selection of any possible combination of the S-parameters corresponding to a sub-device.

15. The method of claim 12, wherein the at least one menu includes a menu that allows selection of any possible combination of the S-parameters corresponding to a sub-device.

16. The method of claim 12, wherein step (d) includes for each sub-device:

(d.1) measuring the S-parameters of interest for each sub-device; and

(d.2) removing calibration errors from the measured S-parameters, the calibration errors determined by the VNA during step (b).

17. The method of claim 16, wherein:

step (a) includes determining a set of error coefficients representative of calibration errors; and

step (d.2) includes using only a sub-set of the set of error coefficients determined in step (a) when removing calibration errors, the sub-set corresponding to the measured S-parameters of interest as accepted in step (c).

18. The method of claim 17, wherein step (d.2) further includes determining the error coefficient sub-set using the following rules:

(i) for each reflection parameter accepted at step (c), including corresponding reflectometer error coefficients in the error coefficient sub-set;

(ii) for each transmission parameter accepted at step (c), including its corresponding transmission tracking error coefficient in the error coefficient sub-set; and

(iii) for each transmission parameter accepted at step (c) that also has its matching reflection parameters activated at step (c), including its corresponding load match error coefficients in the error coefficient sub-set.

19. The method of claim 18, wherein the reflectometer error coefficients include directivity, source match and reflection tracking error coefficients.

20. The method of claim 17, wherein prior to step (d.2) the corresponding sub-set of error coefficients for each sub-device is made available in working memory so that error coefficients do not need to be recalled from storage memory each time step (d.2) is performed for a different one of the multiple sub-devices.

21. A method for efficiently characterizing multiple devices using an N-port vector network analyzer (VNA), wherein N is 2 or greater, and each device includes less than N ports, the method comprising:

(a) performing a parent calibration and storing a corresponding set of error coefficients in working memory;

(b) presenting at least one menu that allows a user or test controller to select which S-parameters are of interest for each device;

(c) accepting inputs that specify which S-parameters are of interest for each device; and

(d) determining the S-parameters of interest for each device as identified at step (c), without determining the S-parameters that are not of interest, as follows:

(d.1) measuring the S-parameters of interest for each device; and

(d.2) using only a sub-set of the set of error coefficients stored in working memory in step (a) to remove calibration errors from the measured S-parameters, without recalling error coefficients from static storage memory, the sub-set corresponding to the measured S-parameters of interest as accepted in step (c).

22. The method of claim 21, wherein each device is a sub-device of a larger device capable of being treated as multiple sub-devices because of no or very low transmission between certain ports of the larger device.

23. The method of claim 21, wherein each device is a physically separate device.

24. The method of claim 21, wherein each device is either a sub-device of a larger device capable of being treated as multiple sub-devices because of no or very low transmission between certain ports of the larger device, or a physically separate device.

25. The method of claim 21, wherein step (d.2) further includes determining the error coefficient sub-set using the following rules:

(i) for each reflection parameter accepted at step (c), including corresponding reflectometer error coefficients in the error coefficient sub-set;

(ii) for each transmission parameter accepted at step (c), including its corresponding transmission tracking error coefficient in the error coefficient sub-set; and

(iii) for each transmission parameter accepted at step (c) that also has its matching reflection parameters activated at step (c), including its corresponding load match error coefficients in the error coefficient sub-set.